CLAIMS

That which is claimed is:

1. An aerosolized formulation of particles having an aerodynamic diameter in a range of about 0.5 micron to about 10 microns, comprising:

an electrolyte;

a non-ionized drug; and

a liquid.

2. The aerosolized formulation of claim 1, wherein the liquid is a solvent and the electrolyte and drug are dissolved in the solvent.

3. The aerosolized formulation of claim 1, wherein the particles have an aerodynamic diameter in a range of about 1 micron to about 5 microns.

4. The aerosolized formulation of claim 1, wherein the liquid is a carrier liquid and the drug is dispersed in the carrier liquid.

5. The aerosolized formulation of claim 1, wherein the particles have an aerodynamic diameter in a range of about 2 microns to about 4 microns.

6. The aerosolized formulation of claim 1, wherein the electrolyte is an alkali halide.

7. The aerosolized formulation of claim 6, wherein the alkali halide is selected from the group consisting of sodium chloride and potassium chloride.

8. The aerosolized formulation of claim 1, wherein the electrolyte is a halide of an alkali earth metal.

9. The aerosolized formulation of claim 8, wherein the electrolyte is calcium chloride.

10. The aerosolized formulation of claim 1, wherein the electrolyte is selected from the group consisting of inorganic acids and salts thereof.

11. The aerosolized formulation of claim 10 wherein the electrolyte is selected from the group consisting of hydrochloric acid, sulfuric acid, phosphoric acids and salts of any of the acids.

12. The aerosolized formulation of claim 1, wherein the electrolyte is selected from the group consisting of ammonium hydroxide, acetic acid, sodium acetate, ascorbic acid and a sodium salt of ascorbic acid.

13. The aerosolized formulation of claim 1, wherein the electrolyte is selected from the group consisting of an organic acid, an organic base, a salt of the organic acid, and a salt of the organic base.

14. The aerosolized formulation of claim 1, wherein the non-ionizable drug is selected from the group consisting of Amphotericin; Estrone; Ribavirin; Fluticasone propionate; Beclomethasone dipropionate; Hexamethyl melamine; Benzodiazepines; Lorazepam; Budenoside; Albuterol; Salmeterol; Fentanyl; Phentanyl base; Cyclosporin; Retinoids; Diazepam; Surfactant protein; Droperidol; Testosterone; Ergotamine; THC and its derivatives; Estradiol; Triamcinolone acetonide.

15. The aerosolized formulation of claim 1, wherein the electrolyte is present in a concentration of about 10^{19} ions per liter or more.

16. The aerosolized formulation of claim 1, wherein the electrolyte is present in a concentration of about 5×10^{20} ions per liter or more.

17. The aerosolized formulation of claim 1, wherein the liquid is comprised of water.

18. The aerosolized formulation of claim 1, wherein the liquid is comprised of ethanol.

19. The aerosolized formulation of claim 1 wherein the liquid is selected from the group consisting of water, an alcohol, an alkane, a glycol, a glycerol and mixtures thereof.

20. The aerosolized formulation of claim 1, wherein the liquid is a solvent selected from the group consisting of water, ethanol and a mixture of water and ethanol and wherein the electrolyte is dissolved in the solvent.

21. The aerosolized formulation of claim 1, wherein the formulation further comprises an additional component selected from the group consisting of a solubilizer, a stabilizer, a pH adjuster, a buffer, and an osmolarity adjuster.

22. The aerosolized formulation as claimed in claim 1, wherein the liquid is a solvent and the formulation further comprises a surfactant.

23. The aerosolized formulation of claim 1, wherein the liquid is a carrier liquid and the non-ionized drug is dispersed therein and the formulation further comprises a stabilizing agent.

24. The aerosolized formulation as claimed in claim 1, wherein the formulation is further comprised of an osmolarity adjuster, a pH stabilizing agent, and a fluid density adjuster.

25. An aerosolized formulation of particles having an aerodynamic diameter in a range of from about 0.5 micron to about 10 micron, comprising:

an electrolyte;

a non-ionized drug; and

a solvent having the drug and electrolyte dissolved therein, wherein the electrolyte is present in a concentration in a range of about 10^{19} ions per liter or more.

26. An aerosolized formulation of particles having an aerodynamic diameter in a range of about 0.5 to 10 microns, comprising:

an electrolyte;

a propellant; and

a pharmaceutically active drug characterized by not providing a substantial effect on electrostatic charge of the particle as compared to an effect on electrostatic charge obtained from the electrolyte.

27. A method producing dry powder particles, comprising:

aerosolizing a formulation comprising an electrolyte, a non-ionized drug and a liquid to form an aerosol of particles;

allowing the liquid to evaporate from the particles and form dry particles; and

collecting the dry particles.

28. The method of claim 27, wherein the liquid is a solvent selected from the group of water and ethanol and the dry particles have a diameter of about 0.5 to about 10 microns.

29. The method of claim 27, wherein the liquid is a compound selected from the group consisting of a hydrocarbon, a halocarbon, a chlorocarbon, a fluorocarbon, a chlorofluorocarbon, a chlorofluorohydrocarbon, a perfluorocarbon, a hydrofluoroalkane, an ether, a ketone, a dimethylsulfoxide and mixtures thereof.

30. The method of claim 27, wherein the formulation further comprises a solvent which dissolves the electrolyte thereby enabling the electrolyte to form ions within the formulation.

31. The aerosolized formulation of claim 4, wherein the non-ionizable drug is selected from the group consisting of Amphotericin; Estrone; Ribavirin; Fluticasone propionate; Beclomethasone dipropionate; Hexamethyl melamine; Benzodiazepines; Lorazepam; Budenoside; Albuterol; Salmeterol; Fentanyl; Phentanyl base; Cyclosporin; Retinoids; Diazepam; Surfactant protein; Droperidol; Testosterone; Ergotamine; THC and its derivatives; Estradiol; Triamcinolone acetonide.

32. The aerosolized formulation of claim 1, wherein the liquid is a non-aqueous solvent and the drug is selected from the group consisting of insulin, an insulin analog, monomeric insulin, and insulin lispro.

33. The aerosolized formulation of claim 1, wherein the liquid is a non-aqueous solvent and the drug is a protein.

34. The aerosolized formulation of claim 33, wherein the protein is selected from the group consisting of human growth hormone, human growth factor, erythropoeitin, alpha-, beta-, and gamma- inteferon, an antibody, a soluble receptor, a cytokine, amylin, pegylated protein, pegylated alpha inteferon, parathyroid hormone, calcitonin, folcile stimulating hormone, and alpha-1 antitrypsin.

35. The aerosolized formulation as claimed in claim 1, wherein the liquid is a non-aqueous solvent and the drug is a nucleotide sequence.